

Pancreatic hydatid cyst located distally: A case report

Pancreatic hydatid cyst

Deniz Öçal¹, Tolga Kalaycı²¹Department of Gastroenterology Surgery²Department of General Surgery, Erzurum Regional Education and Research Hospital, Erzurum, Turkey**Abstract**

A 52-year-old male patient admitted to the hospital with abdominal pain, postprandial bloating, and occasional nausea and vomiting for about 6 months. On abdominal physical examination, the patient had abdominal pain with deep palpation in the left upper quadrant. Echinococcus indirect hemagglutination antigen (IHA) test of the patient was positive in 1/640 titer. On CT scan, there was a cystic mass approximately 70 * 60 mm in size in the distal pancreas and bilateral renal cysts. Albendazole treatment was initiated with a dose adjustment according to the patient's weight for 4 weeks. After a 14-day break from albendazole treatment, the patient was prepared for elective surgery. Total cyst resection was performed with partial distal pancreas resection without perforation. Control abdominal CT was performed to evaluate the abdominal cavity on postoperative day 5, and no pathology was observed. Therefore, both drains were taken out. The patient was discharged on the sixth postoperative day.

Keywords

Albendazole, Echinococcus Granulosus, Hydatid Cyst, Pancreas

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Corresponding Author: Deniz Öçal, Department of Gastroenterology Surgery, Erzurum Regional Education and Research Hospital, Erzurum, Turkey.

E-mail: drdenizocal@hotmail.com P: +90 505 297 33 30

Corresponding Author ORCID ID: <https://orcid.org/0000-0002-8084-8866>

Introduction

Hydatid cyst (HC), caused by *Echinococcus granulosus* or *Echinococcus multilocularis* parasite, is mostly seen in the liver and lungs, it can rarely be seen in all organs and soft tissues. In the studies conducted, the incidence of isolated pancreatic hydatid cyst has been reported to be 1-2% [1]. Due to the low prevalence of the disease, it is often confused with cystic lesions of the pancreas, often with pseudocysts. HC can be asymptomatic for a long time. Symptoms vary according to the size and location of the cyst. As the size of the cyst grows, symptoms occur due to compression on surrounding organs.

Basic laboratory tests (hemogram, biochemical analysis, tumor markers), *Echinococcus* indirect hemagglutination antigen (IHA) test, and imaging tools can be helpful at diagnosis. In cases scheduled for operation, surgery should be planned after 1 month of albendazole treatment [2].

In this case report, we aimed to present a patient with HC localized distal to the pancreas.

Case Report

A 52-year-old male patient admitted to Erzurum Regional Education and Research Hospital, Erzurum, Turkey in August 2019. He had abdominal pain, postprandial bloating, and occasional nausea and vomiting for about 6 months. The patient's complaints had increased significantly in the last month. The patient had no additional disease, except for a history of tuberculosis 10 years ago. In addition, the patient underwent splenectomy due to trauma four years ago.

On evaluation, the vital findings of the patient were as follows: blood pressure: 134/72 mm Hg, pulse rate: 108 beats per minute, oxygen saturation on room air: 96%, and body temperature: 37.7° Celsius. The patient's height was 172 millimeters and he weighed 82 kilograms. On physical examination of abdomen, the patient had abdominal pain with deep palpation in the left upper quadrant. A digital rectal examination was also normal. Other system examinations were normal. In laboratory findings, basic hemogram, biochemical parameters were unremarkable. Tumor markers (carcinoembryonic antigen, CA19-9, alpha-fetoprotein) of the patient were also normal. *Echinococcus* indirect hemagglutination antigen (IHA) test of the patient was positive in 1/640 titer.

Ultrasound revealed a mass with a diameter of 60 mm between the distal pancreas and left kidney (simple cyst or cyst hydatid). Both computed tomography (CT) and magnetic resonance imaging (MRI) were planned for the patient to evaluate the origin of the mass and the surrounding organ neighborhood. On CT scan, there was a cystic mass approximately 70 * 60 mm in size in the distal pancreas and bilateral renal cysts (Figure 1). According to the classification of echinococcal cysts by the World Health Organization (WHO), this mass was considered as CE 2 (active stage). On MRI, a cystic lesion 65x55x77 mm in size in the tail of the pancreas was seen (Figure 2).

After IHA test positivity, CT and MRI images were evaluated together, hydatid cyst was considered in the patient, and albendazole treatment was initiated by dose adjustment according to the patient's weight (albendazole tablet 400 mg every 12 hours) for 4 weeks. After a 14-day break from albendazole treatment, the patient was prepared for elective

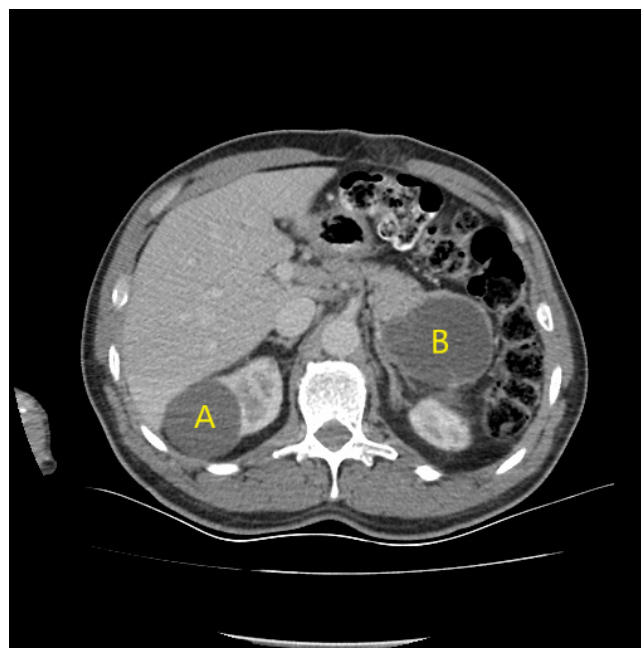


Figure 1. CT scan of a 52-year-old patient with abdominal pain. A: right renal cyst, B: cystic mass originated from the distal pancreas (hydatid cyst).

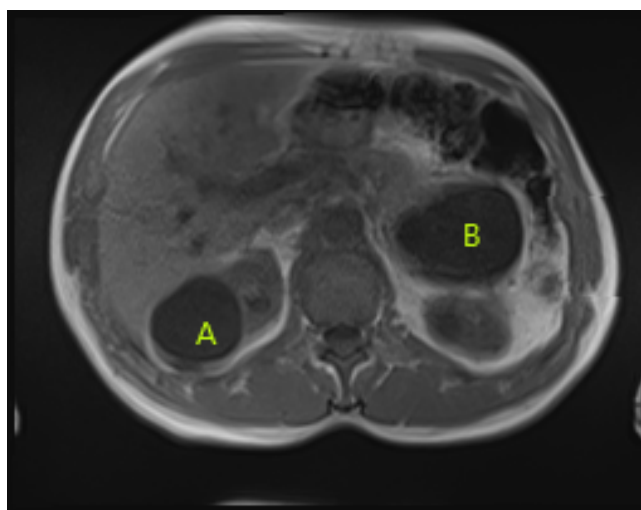


Figure 2. MRI image of a hydatid cyst originated from the distal pancreas. A: right renal cyst, B: cystic mass originated from the distal pancreas (hydatid cyst).

surgery. Open surgery was performed with a midline incision. On intraoperative evaluation, a cystic mass was seen anterior of the left kidney. Sponges impregnated with the hypertonic solution were placed around the mass. The mass was resected completely without perforation. The cyst was opened on the operation table. There were multiple daughter cysts with germinative membrane. A drain was placed at the border of the distal pancreas (drain 1), while the other drain was placed at the left sub-diaphragmatic area (drain 2).

The patient was followed in the service during the postoperative period. Oral intake was opened 6 hours after surgery. On the postoperative day 1, about 200 cc serohaemorrhagic fluid came from drain 1, while there was no fluid coming out of drain 2. The amylase level of drain (1) fluid was measured as 1224 U/L, and the serum amylase level was 480 U/L at the same time (normal range= 30-118 U/L). On the postoperative day 2, about 100 cc

of serous fluid came out of drain 1. The amylase level of drain (1) fluid was measured as 743 U/L, and the serum amylase level was 230 U/L at the same time. On the postoperative day 3, about 50 cc of serous fluid came out of drain 1. The amylase level of drain (1) fluid was measured as 243 U/L, and the serum amylase level was 78 U/L at the same time. On the postoperative day 4, no fluid came from drain 1, and the serum amylase level was 63 U/L. Control abdominal CT was performed to evaluate the abdominal cavity on the postoperative day 5, and no pathology was observed. Therefore, both drains were taken out. The patient was discharged on the sixth postoperative day with no complications. The postoperative pathology was suitable with hydatid cyst. Albendazole treatment, which was initiated preoperatively, continued for 2 more months.

Discussion

Echinococcus granulosus or *Echinococcus multilocularis* cause hydatid cyst (HC) in humans. HC is an important public health problem, especially in undeveloped and developing countries in Africa and South Asia. It is also common in Turkey, especially in the Eastern Anatolia and Southeastern Anatolia regions [2]. Approximately 2/3 of HC cases are located in the liver. The second most common site is the lungs. However, HC can develop in any organ or tissue. The clinical presentations of the echinococcus vary depending on the involvement of the organ and the size of the cysts. While small or calcified hydatid cysts may be asymptomatic, large hydatid cysts may exert pressure or may rupture. Cysts may grow 1-5 cm in size per year or may stay silent for years [3].

The incidence of isolated pancreatic HC is 1-2%, and 50% of these are located in the head of the pancreas [1, 3]. HC can be asymptomatic for a long time. Symptoms vary according to the size and location of the cyst. As the size of the cyst grows, symptoms occur due to compression on surrounding organs. Complaints such as abdominal pain, bloating and nausea may be seen. Rarely, obstructive jaundice and cholangitis may occur in cysts located in the head part due to compression on the bile ducts. Acute and chronic pancreatitis can also be seen in hydatid cysts that cause compression on the pancreatic canal and fistula [4].

Laboratory tests, *Echinococcus* indirect hemagglutination antigen (IHA) test and radiological imaging tools are used for diagnosing. There are no specific laboratory tests for making a diagnosis. Since it is a parasitic disease, eosinophilia was not observed in our patient. ELISA and IHA are commonly used during diagnosis. The sensitivity of IHA is 60-100%, but its specificity is reported to be low. Serological tests may be negative if the amount of antigen in the bloodstream is low [5]. The septal structure and daughter vesicles can be seen on ultrasonography. Advanced imaging tools such as CT, MRI are used to evaluate the differential diagnosis and to evaluate the organ surrounding the cyst. It is difficult to distinguish HC located in an isolated pancreas from other cystic and solid lesions of the pancreas. It has been reported in the literature that the definitive diagnosis of pancreatic hydatid cysts can usually be made during surgery in many cases. Spontaneous perforation, abscess formation and compression findings such as vomiting, nausea are the main complications in untreated

cases [6]. In this patient, the diagnosis of hydatid cyst was diagnosed with a combination of IHA and CT/MRI.

Medical treatment is preferred both preoperatively and postoperatively. Depending on the weight of the patient, albendazole treatment is started 4 weeks before surgery. In patients weighing 60 kg and over, albendazole treatment is started with 400 mg twice a day. In patients weighing less than 60 kg, albendazole treatment is started at 15 mg/kg per day. Depending on the hepatotoxic effect of albendazole, treatment should be performed intermittently (1 month continuous treatment-15 days interval) [7].

Unlike liver hydatid cyst, percutaneous drainage has been reported in very few patients in pancreatic hydatid cyst [8]. Partial cystectomy, cysto-enteric anastomosis, cystotomy drainage and omentoplasty can be applied in surgical treatment, depending on the location of the cyst and the relationship of the pancreatic duct. Distal pancreatectomy is preferred in cases with corpus and tail localization [4]. In our case, the cyst could be completely removed by partial distal pancreatectomy.

In conclusion, pancreatic HC is a rare disease. The HC of the pancreas is mostly located in the head of the pancreas. Symptoms depend on the location of the cyst. Laboratory tests, *Echinococcus* indirect hemagglutination antigen (IHA) test and radiological imaging tools are used for diagnosis. The main purpose of treatment is complete excision of the cyst, if possible, and the continuation of albendazole treatment afterwards.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

Conflict of interest

None of the authors received any type of financial support that could be considered potential conflict of interest regarding the manuscript or its submission.

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